Geometrically frustrated spin systems: The antiferromagnetic XY model on the triangular lattice

Antiferromagnetic spin systems are magnetic lattice systems in which the exchange interaction between two spins (*i.e.*, vectors in S^1) favors anti-alignment. Such systems are said to be geometrically frustrated if, due to the geometry of the lattice, there is no orientation of spins that simultaneously minimizes all pairwise interactions. This is the case for the antiferromagnetic XY model on the two-dimensional triangular lattice. As a consequence, the system has two families of ground states which can be distinguished one from the other by what is called their chirality. In this talk we present a recent result obtained in collaboration with M. Cicales, L. Kreutz, and G. Orlando, where we characterise the discrete-to-continuum Γ-limit of the XY-model energy in a regime which detects chirality transitions on one-dimensional interfaces between the two admissible chirality phases.